AF/1625 IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the application of	) **MAIL STOP APPEAL BRIEF**
	)
HEIDEMANN et al.	) Group Art Unit: 1625
	)
Serial No. 09/830,996	) Examiner: Oh
	)
Filed: May 3, 2001	)
	)

For: SILVER AND VANADIUM-CONTAINING MULTIMETAL OXIDE AND ITS USE

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Honorable Comm'r. of Patents
PO Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

Sir:

This appeal is from the examiner's more than the second time rejection of the claims . The examiner's latest office action is dated March 3, 2004. Applicants' notice of appeal was received by the office on June 4, 2004.

REAL PARTY IN INTEREST

The real party in interest is BASF Aktiengesellschaft, of Ludwigshafen, Germany. Reel/Frame 012344/0062, recorded on May 3, 2001.

RELATED APPEALS AND INTERFERENCES

To appellants' knowledge and belief, there are no interferences or other appeals which will directly affect or be directly affected by or have a bearing on the Board's decision in this application.

STATUS OF THE CLAIMS

Claims 1-8 currently are pending in the application.

STATUS OF THE AMENDMENTS

The last amendment of the claims was the reply under 37 CFR § 1.114 submitted on August 6, 2003.

SUMMARY OF THE INVENTION

The present invention relates to a multimetal oxide of the formula I as defined in the specification which has a crystal structure giving an X-ray powder diffraction pattern which displays reflections at the lattice spacings d as defined in the specification. It is an object of present of the present invention to provide novel catalysts and starting compounds for producing them for processes for the oxidation of aromatic hydrocarbons and also processes for producing these catalysts and starting compounds for these catalysts. These catalysts should have improved properties with respect to activity and selectivity in the oxidation of aromatic hydrocarbons to carboxylic

acids or carboxylic anhydrides, particularly in the oxidation of o-xylene and/or naphthalene to give phthalic anhydride, compared to known catalysts based on Ag-V_2O_5. Applicants have found that this object is achieved by said multimetal oxides of formula I.

ISSUES

Whether claims 1-8 are anticipated by Takada et al. (US 4,965,151).

Whether claims 1-8 are anticipated under 35 USC § 102(b) by Volkov et al. (Ah. Neorg. Khim (1988), 33(7), 1833-5).

GROUPING OF CLAIMS

The claims have not been argued separately.

ARGUMENT

The following legal authorities are relied on in the following arguments in the order in which they are cited:

OBJECTION

Claims 7 and 8 are objected to because the examiner believes there is a need for a period at the end of the table. Applicants do not believe such a period is necessary. The meaning of the claims should be clear to one of ordinary skill in the art.

REJECTIONS

Claims 1-8 are rejected under 35 USC § 102(b) as being anticipated by Takada et al. (US 4,965,151). The examiner believes Takada et al. disclose a multimetal oxide $Ag_xV_2O_{5-y}$, where x is between 0.6 and 0.8 and y is 0 and 5 (see col. 3, lines 10-11); especially, $Ag_{0.6}V_2O_5$, $Ag_{0.65}V_2O_5$, $Ag_{0.8}V_2O_5$, $Ag_{1.0}V_2O_5$, and $Ag_{1.2}V_2O_5$ (see col. 9, lines 55-56). The examiner believes that according to its crystal morphology, the claimed compound has inherently the claimed properties, such as X-ray diffraction pattern and specific surface area, water, etc.

As the present specification indicates, oxides of the above formula vary in their crystalline structure (*see*, *e.g.*, p.3:35-4:14). To support a rejection based on inherency, the examiner shoulders the burden to set forward reasoning or extrinsic evidence to "make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill" (*In re Robertson*, 49 USPQ2d 1949 (Fed. Cir. 1999)). The examiner must provide some evidence or scientific reasoning to establish the reasonableness of the examiner's belief that the functional limitation is an inherent characteristic of the prior art before the applicant can be put through this burdensome task. *Ex parte Skinner*, 2 USPQ2d 1788 (BPAI 1986). Given the potential variability in crystal structure for the oxides disclosed in Takada et al., it cannot fairly be said that the present claim elements are *necessarily* present in those oxides. Without additional reasoning or extrinsic evidence, the examiner's burden has not been met.

Claims 1-8 are rejected under 35 USC § 102(b) as being anticipated by Volkov et al. The examiner believes Volkov et al. disclose a multimetal oxide $Ag_{x-y}Cu_yV_2O_5$, where x is between 0.67 and 0.80 and y is > 0; especially $Ag_{0.5}Cu_{0.5}V_2O_5$. The examiner also believes the reference teaches a multimetal oxide, $Ag_{0.8}V_2O_5$. The examiner further believes that according to its crystal morphology, the claimed compound has inherently the claimed properties, such as X-ray diffraction pattern and specific surface area, water, and etc..

The argument regarding inherency which has been presented above regarding Takana et al. can be applied here for Volkov et al. This is because the examiner also states in the last office action that the x-ray diffraction pattern element is inherent in the recited multimetal oxides.

Anticipation by inherency requires that 1) the missing descriptive matter be **necessarily present** in the prior art reference and that 2) it would be so recognized by persons of ordinary skill in the art. *Continental Can Co. v. Monsanto Co.,* 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). The examiner must provide some evidence or scientific reasoning to establish the reasonableness of the examiner's belief that the functional limitation is an inherent characteristic of the prior art before the applicant can be put through this burdensome task. *Ex parte Skinner*, 2 USPQ2d 1788 (BPAI 1986). Given the potential variability in crystal structure for the oxides disclosed in Volkov et al., it cannot fairly be said that the present claim elements are *necessarily* present in those oxides. Without additional reasoning or extrinsic

evidence, the examiner's burden has not been met.

CONCLUSION

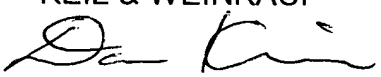
For the foregoing reasons, it is respectfully submitted that reversal of the examiner's rejection of all claims is in order.

A check in the amount of $330.00 is enclosed.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

KEIL & WEINKAUF



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APPENDIX

COPY OF ALL CLAIMS

1. A multimetal oxide of the formula I

$$Ag_{a-b}M_bV_2O_x * c\ H_2O, \qquad I$$

where M is a metal selected from the group consisting of Li, Na, K, Rb, Cs, Tl, Mg, Ca, Sr, Ba, Cu, Zn, Cd, Pb, Cr, Au, Al, Fe, Co, Ni and/or Mo,

a is from 0.3 to 1.9 and

b is from 0 to 0.5, with the proviso that the difference (a–b) is greater than or equal to 0.1 and

c is from 0 to 20 and

x is a number determined by the valence and amount of elements different from oxygen in the formula I,

which has a crystal structure giving an X-ray powder diffraction pattern which displays reflections at the lattice spacings d of 15.23 ± 0.6, 12.16 ± 0.4, 10.68 ± 0.3, 3.41 ± 0.04, 3.09 ± 0.04, 3.02 ± 0.04 , 2.36 ± 0.04 and 1.80 ± 0.04 Å.

2. A multimetal oxide as claimed in claim 1 which has a fibrous crystal morphology having a mean ratio of fiber diameter to fiber length of less than 0.6.

3. A multimetal oxide as claimed in claim 1 which has a specific surface area determined by the BET method of from 3 to 250 m^2/g.

4. A multimetal oxide as claimed in claim 1 in which a is from 0.5 to 1.0, b is from 0 to 0.3 and c is from 0 to 5.

5. A multimetal oxide as claimed in claim 1 in which a is from 0.6 to 0.9, b is from 0 to 0.1 and c is from 0 to 1.

6. A multimetal oxide as claimed in claim 1 and having the formula

$$Ag_aV_2O_x^* \; c\; H_2O,$$

where a is from 0.6 to 0.9, x is as defined in claim 1 and c is from 0 to 5.

7. A multimetal oxide as claimed in claim 1 whose X-ray powder diffraction pattern displays the following 17 reflections at the specified lattice spacings d [Å]:

Reflection 1 at 15.23 + 0.6; 2 at 12.16 + 0.4; 3 at 10.68 + 0.3; 4 at 5.06 + 0.06; 5 at 4.37 + 0.04; 6 at 3.86 + 0.04; 7 at 3.41 + 0.04; 8 at 3.09 + 0.04; 9 at 3.02 + 0.04; 10 at 2.58 + 0.04; 11 at 2.48 + 0.04; 12 at 2.42 + 0.04; 13 at 2.36 + 0.04; 14 at 2.04 + 0.04; 15 at 1.93 + 0.04; 16 at 1.80 + 0.04; 17 at 1.55 + 0.04.

8. A multimetal oxide as claimed in claim 7 whose reflections 1 to 17 have the following approximate relative intensities (I_{rel} [%]):

Reflection 1: 16 I_{rel}[%]; 2: 11 I_{rel}[%]; 3: 18 I_{rel}[%]; 4: 11 I_{rel}[%]; 5: 23 I_{rel}[%]; 6: 16 I_{rel}[%]; 7: 80 I_{rel}[%]; 8: 61 I_{rel}[%]; 9: 100 I_{rel}[%]; 10: 23 I_{rel}[%]; 11: 24 I_{rel}[%]; 12: 23 I_{rel}[%]; 13: 38 I_{rel}[%]; 14: 26 I_{rel}[%]; 15: 31 I_{rel}[%]; 16: 43 I_{rel}[%]; 17: 36 I_{rel}[%].

Claims 9-26 (Withdrawn).